

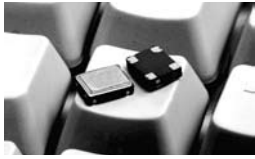
# MM Series

5x7 mm, 5 Volt, HCMOS/TTL, Surface Mount Oscillator

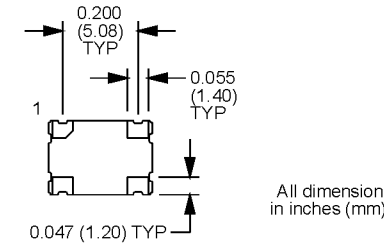
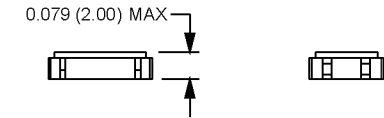
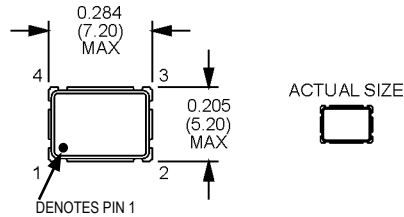
# OBSOLETE



PLEASE REFER TO THE M1 PRODUCT SERIES.

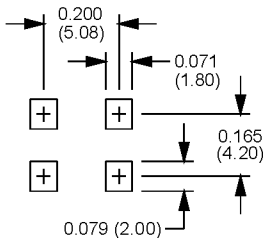


- AT-strip crystal in a miniature ceramic surface mount package.
- TTL and HCMOS compatible
- Tri-state output is optional



All dimensions in inches (mm).

SUGGESTED SOLDER PAD LAYOUT



NOTE: A capacitor of value 0.01  $\mu$ F or greater between Vdd and Ground is recommended.

| PIN | FUNCTION         |
|-----|------------------|
| 1   | N/C or Tri-state |
| 2   | Ground           |
| 3   | Output           |
| 4   | +Vdd             |

**Tri-state Control Logic**

Pin 1 high or floating: clock signal output.  
Pin 1 low: output disabled to high impedance.

### Ordering Information

**00.0000 MHz**

**Product Series** MM 1 3 T A N

**Temperature Range**  
 1: 0°C to +70°C      2: -40°C to +85°C  
 6: -20°C to +70°C

**Stability**  
 3:  $\pm 100$  ppm      4:  $\pm 50$  ppm  
 5:  $\pm 35$  ppm      6:  $\pm 25$  ppm  
 8:  $\pm 20$  ppm

**Output Type**  
 F: Fixed      T: Tristate

**Symmetry/Logic Compatibility**  
 A: 40/60 HCMOS/TTL (Up to 50.000 MHz)  
 C: 45/55 HCMOS  
 G: 40/60 HCMOS (50.001 to 67.000 MHz)

**Package/Lead Configurations**  
 N: Leadless

**Frequency (customer specified)**

| Electrical Specifications   |                  |        |            |         |        |
|---|------------------|--------|------------|---------|--------|
| Standard Operating Conditions • 0°C to +70°C; Vdd = 5.0 $\pm$ 10% VDC |                  |        |            |         |        |
| Storage Temperature • -55°C to +125°C                                 |                  |        |            |         |        |
| PARAMETERS  | A SYMMETRY/LOGIC |        |            |         | UNITS  |
|   | TTL Load         |        | HCMOS Load |         |        |
| MIN.  | MAX.             | MIN.   | MAX.       |         |        |
| Frequency Range <sup>1</sup>  | 1.500            | 50.000 | 1.500      | 50.000  | MHz    |
| Output Load <sup>2</sup>  |                  | 10     |            | 50      | TTL/pF |
| Symmetry <sup>3</sup>   | 40/60            | 60/40  | 40/60      | 60/40   | %      |
| Logic "0" Level   |                  | 0.5    |            | 10% Vdd | V      |
| Logic "1" Level   | Vdd-0.5          |        | 90% Vdd    |         | V      |
| Rise/Fall Time <sup>4</sup>   |                  | 6      |            | 10      | ns     |
| Supply Current  |                  |        |            |         |        |
| 1.500 to 15.000 MHz   |                  | 20     |            | 25      | mA     |
| 15.001 to 32.000 MHz  |                  | 25     |            | 30      | mA     |
| 32.001 to 50.000 Mhz  |                  | 40     |            | 45      | mA     |
| PARAMETERS  | G SYMMETRY/LOGIC |        |            |         | UNITS  |
|   | MIN.             | MAX.   | MIN.       | MAX.    |        |
| Frequency Range <sup>1</sup>  |                  |        | 50.001     | 67.000  | MHz    |
| Output Load <sup>2</sup>  |                  |        |            | 50      | pF     |
| Symmetry <sup>3</sup>   |                  |        | 40/60      | 60/40   | %      |
| Logic "0" Level   |                  |        |            | 10% Vdd | V      |
| Logic "1" Level   |                  |        | 90% Vdd    |         | V      |
| Rise/Fall Time <sup>4</sup>   |                  |        |            | 10      | ns     |
| Supply Current  |                  |        |            | 60      | mA     |

<sup>1</sup> Because this product is based on AT-strip technology, not all frequencies in the range stated are available. Contact the factory for availability of specific frequencies.  
<sup>2</sup> TTL load - See load circuit diagram #1. HCMOS load - See load circuit diagram #2.  
<sup>3</sup> Symmetry is measured at 1.4 V with TTL load, and at 50% Vdd with HCMOS load.  
<sup>4</sup> Rise/Fall times are measured between 0.5 V and 2.4 V with TTL load, and between 10% Vdd and 90% Vdd with HCMOS load.

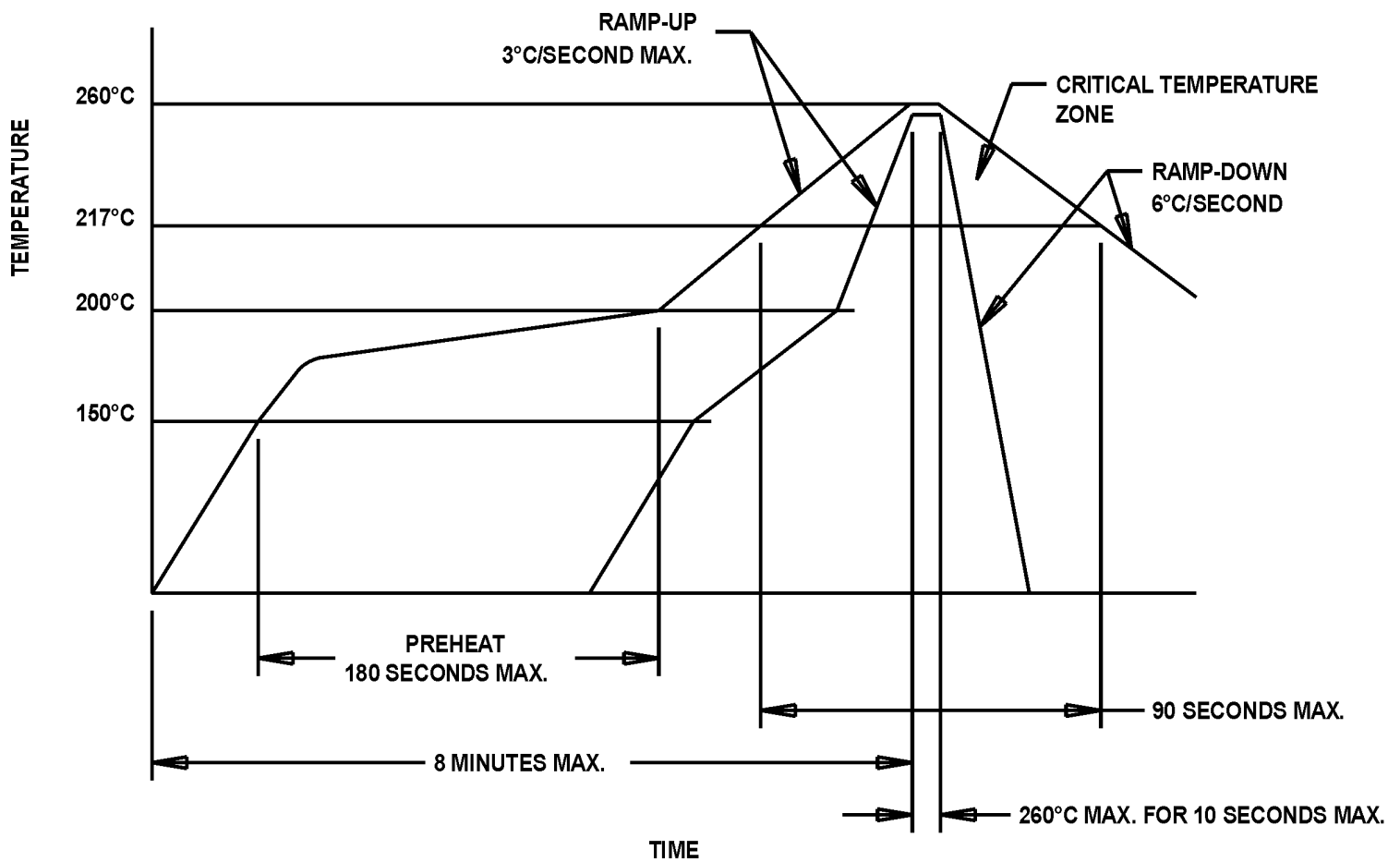
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# OBSOLETE



## MtronPTI Lead Free Solder Profile



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